Final
Project Management Plan

Subsurface Interim Measure/ Interim Remedial Action

903 Pad and East Trenches Area

Operable Unit No. 2

Environmental Restoration Management
Rocky Flats Plant
Golden, Colorado

SIGNATURE PAGE

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Acronym List

AGM	Associate General Manager
CC	Construction Coordinator
CDH	Colorado Department of Health
CFR	Code of Federal Regulations
CM	Construction Management
CP&B	Central Planning and Budgets
DOE	Department of Energy
EE&T	Environmental Engneering and Technology
EQS	Environmental Quality Support
EPA	Environmental Protection Agency
EPM	Environmental Protection Management
ERM	Environmental Restoration Management
ES&E	Environmental Science & Engineering
FCM	Facilities Construction Management
FE	Facilities Engineering
FEC	Facilities Engineering Coordinator
FOM	Facility Operations Management
FPC	Facilities Project Coordinator
FPM	Facilities Project Management
FS	Feasibility Study

GAC	Granulated Activated Carbon
H&S	Health and Safety
HEPA	High Efficiency Particulate Air
HSC	Health and Safety Coordinator
IAG	Interagency Agreement
IHSS	Individual Hazardous Substance Site
IM/IRA	Interim Measures/Interim Remedial Action
IRA	Interim Remedial Action
IRAP	Interim Measures/Interim Remedial Action Plan
IWCP	Integrated Work Package
OJT	On the Job Training
ORR	Operational Readiness Review
OSWER	Office of Superfund Waste and Environmental Restoration
OU	Operable Unit
PMP	Project Management Plan
QAA	Quality Assurance Addenda
QAPP	Quality Assurance Program Plan
RAD OPS	Radiation Operations
RD	Restricted Data
RFP	Rocky Flats Plant
RI/FS	Remedial Investigation/Feasibility Study
RPM	Remediation Program Management

RPT	Radiation Protection Technologists
SA	Subcontractor Administrator
SMO	Sample Management Organization
SOP	Standard Operating Procedure
SOW	Statement of Work
SVE	Soil Vapor Extraction
VOC	Volatile Organic Compound

1.0 INTRODUCTION

1 1 PROJECT MANAGEMENT PLAN OBJECTIVES

The purpose of this Project Management Plan (PMP) is to provide the tools, guidance, and information for the management of this project

The PMP defines and describes the following information

- Purpose, Objectives, and Scope of the OU 2 Subsurface Interim Remedial Action
- Background Information
- Work Package Information Including Schedules and Organizational Chart with Responsibilities towards Assigned Tasks
- Duties/Responsibilities
- Reporting and Document Requirements
- Relevant Technical Reports
- Regulatory Guidance and EG&G Administrative Documents

Additional information is described and cited in this document

1 2 IM/IRA OBJECTIVES

1 2 1 Scope

The purpose of the final Subsurface Interim Measures/Interim Remedial Action (IM/IRA) Plan (IRAP) is to address the *in situ* removal of suspected residual, free-phase volatile organic compound (VOC) contamination beneath the 903 Pad, the East Trenches, and the Mound This is a pilot scale project that will assess the effectiveness of an *in situ* soil vapor extraction (SVE) system in remediation of residual VOC's in groundwater and unsaturated soils

1 2 2 Technical Objectives Of The IRA

The technical objectives of the IRA are as follows

- To demonstrate that *in situ* removal of VOCs from a subsurface environment can be accomplished using a vacuum enhanced SVE system
- To obtain site specific technical information that will assist in the selection of technologies for use in comprising remedial action designs for the Feasibility Studies (FS) and for the Remedial Action Design process
- To contain and abate the migration of VOC contamination in groundwater

2 0 BACKGROUND

2 1 EVOLUTION OF THE SUBSURFACE IM/IRA

The U S Department of Energy (DOE) has prepared an IM/IRAP to investigate the removal of VOC contamination in the subsurface of OU2 at the Rocky Flats Plant (RFP) (EG&G, 1992) The IM/IRAP identified SVE[1] as an applicable technology to be implemented at OU2 In addition, the IM/IRAP identified three locations to which SVE should be applied This test plan provides guidance for implementation of the first pilot-scale SVE at the East Trench of OU2

The pilot test plan addresses SVE at a test site which includes part of Individual Hazardous Substance Site (IHSS) No 110 This IHSS is also known as Trench T-3, and will be referred to as T-3 throughout the remainder of this document This pilot test plan provides performance specifications for design and construction of the SVE pilot system (EG&G, 1992) The plan also includes procedures for system operations testing, performance monitoring and field testing of the pilot system at T-3 The pilot test procedures presented in the plan have been developed in accordance with the U S Environmental Protection Agency's (EPA) guidance for conducting SVE treatability studies (EPA, 1991a)

A brief summary of the Remedial Investigation/Feasibility Study (RI/FS) activities at OU2 is provided A complete discussion of these activities may be found in the Subsurface IM/IRAP (EG&G, 1992b)

A Phase I RFI/RI was conducted at OU2 in 1987 It consisted of detailed topographic maps, radiometric and organic vapor screening surveys, surface geophysical surveys, a soil gas survey, a boring and well completion program, soil sampling, and surface and groundwater sampling Phase I data did not completely define the nature and extent of contamination for the purpose of conducting a baseline risk assessment and an FS of remedial alternatives pertaining to contaminated media (Rockwell International, 1987)

Therefore, a Phase II RFI/RI was started in October 1991 to further characterize OU2 Phase II activities are proceeding and are expected to be completed in 1994 The Phase II RFI/RI includes the advancement of soil borings into contaminant sources to characterize any contaminated materials remaining in place, installation of groundwater monitoring wells adjacent to some of the boreholes to characterize groundwater quality directly beneath the suspected waste source sites, and installation of additional alluvial monitoring wells to further characterize and monitor groundwater flow and quality at OU2

[1]Soil vapor extraction is also known as vacuum-enhanced vapor extraction, *in situ* volatilization, soil venting, and *in situ* soil stripping

In recent years, DOE has prepared several IM/IRAPs to address groundwater, surface water, and soil contamination at OU2 A draft of the first such plan was prepared by DOE in 1989 and addressed the contaminated OU2 groundwater (Rockwell International, 1989) The plan was prepared based on limited knowledge of the nature and extent of groundwater contamination at OU2 Regulatory agency review of the document determined that, although an IM/IRA for groundwater is required by the Interagency Agreement (IAG) (EG&G, 1991d), insufficient information existed on the nature and extent of groundwater contamination to pursue effective groundwater remediation at that time Therefore, pursuit of an IM/IRA for remediation of OU2 groundwater was deferred until Phase II RFI/RI data was collected

In March 1991, DOE submitted an IM/IRAP addressing contaminated surface water within the South Walnut Creek Drainage Basin (EG&G, 1991a) The plan proposed that contaminated surface water be collected and treated by chemical precipitation and microfiltration for removal of radionuclides and metals, followed by treatment by granular activated carbon (GAC) adsorption for removal of VOCs Installation of the surface water IM/IRA was completed in April, 1992, and the system was started in May, 1992 Pilot testing of the South Walnut Creek IM/IRA treatment system is scheduled to continue through the Summer of 1993

DOE submitted a second surface water IM/IRAP for OU2 in October, 1991 (EG&G, 1991b) This plan considered several alternatives for the collection and treatment of contaminated surface seepage within the Woman Creek Basin The plan also presented a detailed evaluation of the impacts to human health and the environment associated with the contaminated seepage The results indicated that no immediate threat to public health or the environment existed Thus, the IM/IRAP presented the No Action Alternative as the preferred alternative Meetings between DOE, EPA, and the Colorado Department of Health (CDH) were held subsequent to submission of the IM/IRAP to discuss alternative IM/IRAs that could be conducted at OU2 in lieu of the originally conceived Woman Creek Basin surface water action At the conclusion of these discussions, a decision was reached to pursue an IM/IRA that addressed suspected residual and free-phase VOC contamination in the subsurface at one or more OU2 areas It was also decided that because subsurface VOC contamination at OU2 does not pose an immediate threat to public health and the environment, IM/IRA should primarily be used to gain information that will aid in selection and design of final remedial actions at OU2

In September 1992, DOE released a final Subsurface IM/IRAP to investigate the removal of VOC contamination from three areas within OU2 Specifically, the SVE technology would be pilot tested within, or adjacent to, suspected VOC source areas in the 903 Pad, Mound, and East Trenches The locations of the proposed pilot test sites are shown in Figure 1-1 of the Subsurface IM/IRAP An overview of pilot study investigations for each proposed test site is discussed in Sections 3 2 1 through 3 2 3

2 2 SVE PROJECT DESCRIPTION

The IRAP will be implemented in three phases

- Location of Test Sites
- *In Situ* Pilot Testing
- Sustained Operations

2 2 1 Location of Test Sites

The first phase is to select primary and alternate sites for the vapor injection and extraction wells and monitor wells Existing data obtained from the Phase I and Phase II RFI/RI studies at OU2 will be included A soil vapor survey will obtain additional information on the presence of residual, dense, non-aqueous phase liquids and free phase VOCs at each site Three test sites will be selected-two sites from the East Trenches and one from the 903 Pad

2 2 2 *In Situ* Pilot Testing

The second phase involves *in situ* testing of the proposed vapor extraction systems at each of the test sites Information collected will include types, temperature, and volume of material injected into and extracted from the ground, presence of residual VOCs in the extracted soil vapors, and reduction of residual VOCs in the subsurface environment This phase includes installation and pre-testing, system operations testing, and pilot testing under the following conditions

- East Trench (IHSS 110)
  - SVE in the Alluvium
  - SVE Coupled with Groundwater Depression in the Sandstone Bedrock
- 903 Pad (IHSS 112)
  - SVE Coupled with Groundwater Depression in the Alluvium
  - SVE in the Upper Portion of the Claystone Bedrock

- East Trench (IHSS 111 1)
  - SVE in the Alluvium
  - SVE in the Upper Portion of the Underlying Sandstone Bedrock

The Subsurface IM/IRA includes passive and active air injection systems for enhancement of VOC mass recovery rate Additionally, subsurface heating utilizing electrical elements will be employed at the East Trenches during evaluation of SVE at test site number 2

It should be noted that in addition to IHSSs 110, 111 1 and 112, other candidates for soil vapor extraction exist within OU2 This includes IHSS 109 IHSS 109 is a burial trench located approximately 300-feet south of the 903 Pad Alternative locations may be substituted for IHSSs 110, 111, and 112 if the OU2 Phase II RFI/RI and the soil vapor survey data (EG&G, 1992a) suggest that the alternative sites would better serve the pilot test program

2 2 3 Sustained Operations

The third phase is the implementation of vapor extraction systems at some or all of the OU2 test sites for the *in situ* removal/destruction of VOCs by enhanced vacuum vapor extraction or steam stripping or other *in situ* techniques An evaluation of the effectiveness of SVE to remove subsurface VOCs during pilot testing will determine the criteria under which sustained operations will be performed

3 0 PROJECT ORGANIZATION

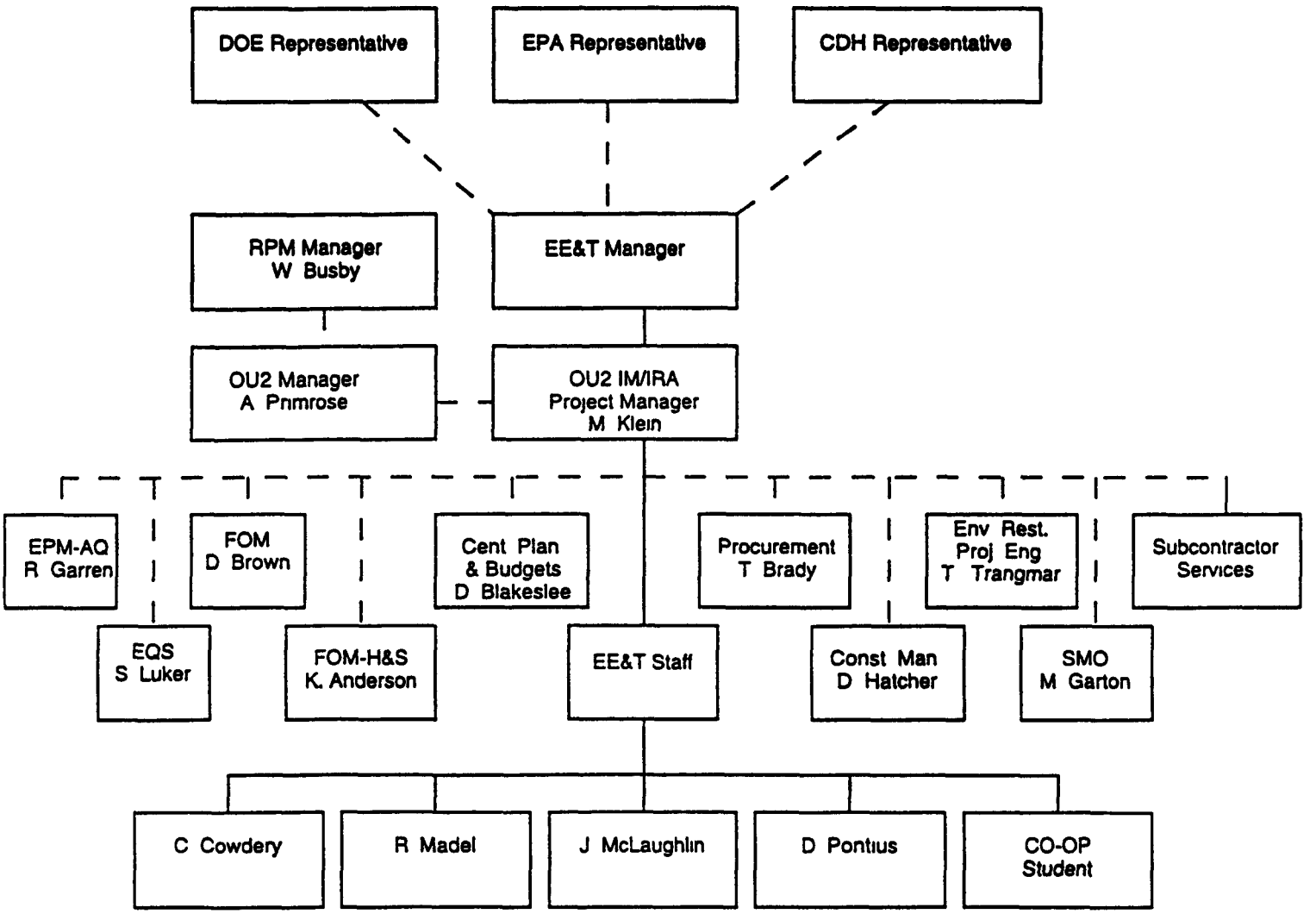
3 1 SCHEDULE

A Gantt Schedule is presented in Appendix A The schedule covers activities from construction through sustained operations for Site #1 The schedule covering the process for determining the location of Site #2 is also included

3 2 PERSONNEL

This project is supported by the EG&G Environmental Restoration Management (ERM) Department and the following ERM divisions, EE&T, RPM, SMO, FOM and EQS The attached organizational chart (Fig 3-1) describes these relationships and shows the names of assigned EG&G personnel who fulfill project responsibilities described in Section 4 0

Figure 3-1
SOIL VAPOR EXTRACTION PROJECT
ORGANIZATIONAL CHART



4 0 PROJECT PARTICIPANT RESPONSIBILITIES

4 1 GENERAL

The following participants are involved in the successful completion of this project Effective communication between participants, the execution of work assignments and the discharge of responsibilities are crucial elements to a well managed team

4 2 DOE

The DOE project representative shall monitor, coordinate and approve all aspects of this project This includes technical, administrative, procedural and financial aspects as well as formal issuance of documents

4 3 EG&G ROCKY FLATS, INC

4 3 1 Environmental Restoration Management (ERM) Remediation Project Management (RPM) OU2 Manager

The RPM OU2 manager is assigned to the project by RPM and reports to the RPM director The RPM OU2 manager serves as a liaison between the ERM Environmental Engineering and Technology (EE&T) OU2 IRA project manager, DOE, EPA and CDH The OU2 manager performs the cost account control and administration, scoping, and scheduling activities The RPM OU2 manager provides guidance and coordinates tasks assigned to the IRA project manager, and has stop-work authority

4 3 2 ERM Environmental Engineering & Technology (EE&T) OU2 IRA Project Manager

The OU2 IRA project manager is assigned to the project by EE&T and reports to the RPM OU2 manager The OU2 IRA project manager supervises, provides guidance, reviews, and coordinates tasks assigned to all supporting staff and managers participating in this OU2 Subsurface IRA Project The OU2 IRA project manager also serves as a key liaison between EG&G, DOE, EPA, CDH, and subcontractors The OU2 IRA project manager supervises the project budgeting, project control and administration, scoping and scheduling activities

4 3 3 Construction Management (CM) Construction Coordinator (CC)

The CC is assigned to the project and reports to the ERM EE&T OU2 IRA project manager for project support activities and administrative functions All construction activities performed by the contractor and its subcontractors will be conducted in accordance with EG&G approved engineering drawings and specifications, Statements of Work (SOW), Construction Work Procedures, Integrated Work Control Package and the contractor's Quality Assurance Field Management Program The CC coordinates and/or schedules required utility outages, street closures, plant access requirements, provides technical inspections of completed work, and assists in obtaining all necessary plant construction work permits The CC ensures work is conducted in accordance with all project safety regulations and prepares progress and other reports on subcontractor performance The CM Manual outlines all other duties of the CC The CC also has stop-work authority if project construction, H&S, or quality criteria are not met

4 3 4 Facilities Project Management (FPM)

The FPM coordinator is assigned to the project by the FPM manager and reports to the ERM EE&T OU2 IRA project manager Duties include preparing the IWCP, coordinating all facilities personnel including but not limited to construction management, systems engineering, safety analysis group, and radiological engineering

4 3 5 Rocky Flats Plant Health & Safety (H&S)

The health and safety coordinator (HSC) is assigned to the project by the Occupational Safety Manager and reports to the ERM EE&T OU2 IRA project manager The HSC is responsible for coordinating all H&S related activities for the project This includes securing the services of health physicists, industrial hygienists, radiation protection technologists (RPTs), and safety engineers HSC monitors the OU2 IRAP project requirements as outlined in the contractor's QA A (i e , construction and operation activities) and the contractor's OU2 IRA site-specific H&S plan The HSC ensures radiologic and industrial hygiene measurements are taken, monitors construction for personnel protection and industrial safety considerations, conducts H&S worksite inspections, documents H&S audits, and reviews all H&S related documents before issuance The contractor shall develop, implement, and monitor a site-specific H&S plan

All EG&G employees, subcontractors, and personnel assigned to this project are required to have all of the requisite training satisfying 29 Code of Federal Regulations (CFR) 1910 and 1927 The HSC or designees have stop-work authority for all safety-related criteria

4 3 6 Procurement

The procurement subcontractor administrator (SA) is assigned to the project by the Procurement Department Subcontracts Manager and reports to the ERM EE&T OU2 IRA project manager Duties include coordination of contracts between EG&G and
subcontractors and providing updates of expenditures to the IRA manager

4 3 7 Central Planning and Budgets (CP&B)

The CP&B representative is assigned to the project by the CP&B Manager and reports to the ERM EE&T OU2 IRA project manager The CP&B representative is responsible for insuring that budgets and schedules are developed and maintained for each work package within the Activity Data Sheet Specific responsibilities include PCS computer interface, report generation/distribution, baseline change proposal generation, change control, budget and schedule forecasts, work package development, and other assignments related to budget and schedule management as determined by CP&B Manager and/or Work Package Manager

4 3 8 Environmental Protection Management (EPM) Air Quality

The air quality representative is assigned to the project by EP and reports to the ERM EE&T OU2 IRA project manager Air Quality monitors meteorology and air quality for ER The Air Quality representative is responsible for operation of high-volume air samplers and reporting of air monitoring data All analyzed air monitoring samples shall be reported immediately to the ER EE&T OU2 IRA project manager Wind conditions will be reported to the ER EE&T OU2 IRA project manager, CC, and HSC as specified in the work procedures

4 3 9 ERM Facilities Operations Management (FOM) Coordinator

The FOM coordinator is assigned to the project by the ERM FOM manager and reports to the ERM EE&T OU2 IRA project manager Duties include performing the project readiness review

4 3 10 ERM Sample Management Organization (SMO)

The Sample Management coordinator is assigned to the project by the ERM Sample Management Organization and reports to the ERM EE&T OU2 IRA project manager Duties include coordination of laboratory analyses and data management

4 4 EPA

The EPA representative(s) interfaces with DOE, CDH, and EG&G on an as requested basis, or to receive status reports and/or approve charges The Quality Assurance (QA) staff, furnished by EPA subcontractors, will also have access to the project on an as requested basis after contacting DOE and EG&G program managers

4 5 CDH

The CDH representative(s) interfaces with DOE, EPA, and EG&G on an as requested basis QA staff, furnished by CDH subcontractors, will also have access to the project on an as requested basis after contacting DOE and EG&G program managers

5 0 PROJECT MANAGEMENT AND CONTROL

5 1 WORK BREAKDOWN STRUCTURE

Work on this task is to be charged to Work Package 12052 and charge number 989011 The Work Breakdown Structure is divided into five subtasks Each subtask is subdivided into work activities The five tasks are

- Subtask One –Site 1 Pilot Test Plan/Pilot Unit Procurement
- Subtask Two –Soil Vapor Survey
- Subtask Three –Pilot Unit Installation at Site 1
- Subtask Four –Site 1 Pilot Test
- Subtask Five –Site 2 Pilot Test Plan

These subtasks and activities are described in detail in the OU2 pilot test plan The workplan schedule is in Appendix A Site 3 will be assigned as appropriate

5 2 BASELINE PROJECT DEFINITION

The baseline project definition is established as a project performance curve for incremental time and costs, and cumulative time and costs This performance curve must be prepared based on approved, planned, budgeted costs and time This will then be the basis for comparison throughout the life of the project as actual time and costs are accumulated This will also be the basis for variance estimates and the decisions that will affect the project

5 3 RESOURCE, COST, AND SCHEDULE CONTROL

A PrimaVera® based scheduling system will be used for the project activities supported by EG&G organizations, subcontractors furnishing services, and vendors furnishing equipment and materials This system will allow the orderly handling of all project tasks and activities All project tasks must be broken down to include several activities Committed resources (i e , in writing by contract, or by proposal SOW), estimated costs and schedules, proposed start and end dates, durations, and milestones must be defined for each task and activity that will be controlled by the project manager Detailed supporting documentation (i e , time and costs expended by resources for each project task/activity elements) must be furnished in writing by all supporting organizations upon request by the project manager This will assist the project manager in controlling the project in a timely manner

5 4 PERFORMANCE MONITORING

Performance of the project is continuously monitored by the managers and supervisors Work performance parameters monitored include hours expended, direct and indirect costs incurred, and successful and timely completion of deliverables

5 5 TECHNICAL CHANGE CONTROL

A technical change control methodology will be used for the Action Plan activities to allow the orderly handling of project changes A design change must be supported by a brief design memorandum, technical report, or document that adequately addresses the technical nature of the proposed change All design change documentation will include a breakdown of additional work, a list of project elements and tasks, a list of major equipment, and a summary of options with descriptions of the beneficial and negative aspects of the proposed change This document must be forwarded to the project manager for review and approval Time spent on the preparation of this document must be approved by the project manager

5 6 COST AND SCHEDULE CHANGE CONTROL

A cost and schedule change control methodology will be used for the project activities to allow for the orderly handling of project changes All design changes will include cost and schedule changes, proposed start and end dates, durations, and milestones that will be controlled by change orders handled by the project manager and forwarded to the Purchasing Department

5 7 CHANGE APPROVAL REQUIREMENTS

All scope changes will be controlled through change orders handled by the project manager and forwarded to the purchasing department, and require presentation to the Change Control Board

5 8 PROJECT RECORDS AND COMMUNICATIONS

All major activities must be documented for the project record and for effective communications between project staff These activities include

- Monthly progress reporting on work accomplished, time expended, costs incurred, and a comparison with performance curves,
- Interactions with the client, ERM, other EG&G organizations, subcontractors, and regulatory agencies, including meetings, telephone calls, trip reports, and written correspondences

5 8 1 Reporting

5 8 1 1 Monthly Progress Reports

This work package will have a monthly report on all tasks and activities with work accomplished, schedule, and budget variance reports for each task

5 8 1 2 Weekly Expended EG&G Labor Reports

This report is provided to the EE&T IRA project manager by the Central Planning coordinator

5 8 2 Meetings

All meetings for this project with DOE, EPA, CDH, and representatives of those organizations as well as EG&G organizational OU2 IRA project meetings will be recorded and documented by the OU2 IRA program manager within five working days

5 8 3 Telephone Records

All telephone conversations for this project with DOE, EPA, CDH, and representatives of these organizations will be documented in telephone conversations records (see attached form) and forwarded to the EE&T OU2 IRA project manager

5 8 4 Daily Logs

An EG&G daily project log will be maintained by the OU2 CC This log will be reviewed on a weekly basis, or as needed, by the EE&T OU2 IRA project manager and IRA project engineers

5 8 5 File and Document Management

A file/document management plan is enclosed in Appendix B Included are correspondences, contract information, calculations and drawings, reports, data permits, reference material and project management material

5 9 MILESTONES

Milestones represent the completion of major work elements for the project Milestones serve as the basic management tool to monitor project progress The Gantt schedule, in Appendix A, presents both internal and external milestones that correspond to this project

5 10 PERSONNEL TRAINING

All personnel involved in the SVE field project will be required to complete the following training courses

5 10 1 EG&G Personnel

- GET Employee Training
- Computer Security
- RCRA Awareness (435) and On-the Job Training (OJT)
- Respirator Indoctrination
- Respirator Fit Testing
- Hazardous Communication (OJT)
- OSHA 40-Hour Health&Safety
- Radiation Worker I (Supervisors)
- Radiation Worker II (Workers)
- Conduct of Operations 1 (Workers)
- Conduct of Operations 3 (Supervisors&Managers)

5 10 2 Subcontractor Personnel

- GET Training Subcontractors
- Computer Security
- RCRA Awareness (435) and OJT
- Respirator Indoctrination
- Respirator Fit Testing
- Hazardous Communication (OJT)
- OSHA 40-Hour Health&Safety
- Radiation Worker I (Supervisors)
- Radiation Worker II (Workers)

6 0 QUALITY ASSURANCE

6 1 RESPONSIBILITY AND AUTHORITY

The Environmental Quality Support (EQS) and Records and Documentation Group Director will be responsible for monitoring, recording, performing inspections and surveillance, and tracking quality of project deliverables

The EQS representative will be responsible for the following,

- Establishing the Data Quality Objectives to be met throughout the project The primary objective of the sampling and analysis program is to measure the instantaneous contaminant mass recovery rate changes with time and system configuration Secondary objectives include measuring the effectiveness of the off-gas treatment equipment, characterization of the pumped ground-water waste stream, and characterization of soil samples collected during the drilling for vapor extraction wells
- Incorporating quality, inspection, and records requirements into internal OU2 IRA project related plans, procedures, and instructions that affect quality
- Approving the Quality Assurance Addenda (QAA) and other internal project related plans, procedures, and instructions that affect quality
- Conducting surveillance and inspection activities of the work being performed at the OU2 IRA
- Identifying issues involving matters adverse to quality
- Reporting issues on matters adverse to quality to EE&T, RPM and the ERM Associate General Manager (AGM)
- Reviewing and tracking matters involving nonconformance and those requiring corrective action
- Approving nonconformance resolution
- Ensuring that quality records of the project are forwarded to the records file
- Compiling a final OU2 IRA activities Quality Report to be submitted to the EE&T manager, the RPM director, the ERM AGM, and the records file upon completion of the project

- Recommending corrective action on matters requiring corrective action resolution
- Stop-work authority in project matters adverse to quality

6 2 DESIGN

Performance of technical design related tasks, specifically, but not limited to, calculations used in developing data and calculations incorporated into reports, will be reviewed, verified, and documented by the QA program manager Calculations will be performed in accordance with EG&G Procedure 3-21000-ADM-03 07

6 3 DOCUMENT CONTROL

The subcontractor will acknowledge receipt of and manage EG&G plans and procedures in accordance with EG&G Procedure 3-21000-ADM-06 01 The following documents are controlled on this project and require review and approval by EG&G, DOE, EPA and CDH

6 3 1 Project Documents

- Final Subsurface Interim Measures/Interim Remedial Action Plan/Environmental Assessment and Decision Document, Operable Unit No 2, FINAL August 20, 1992
- Operations and Maintenance Manual, Rocky Flats Mobile Soil Vapor Extraction Pilot Plant, Operating Procedures, Final Pending
- Project Management Plan, 903 Pad, Mound, and East Trenches Area, Final Pending

6 3 2 Site No 1 Documents

- OU2 IM/IRA Implementation and Operation Plan, Soil Vapor Extraction Pilot Test, RFP, Operable Unit 2, FINAL January 4, 1993
- Project Specific Health & Safety Plan for Soil Vapor Extraction, Subsurface IM/IRA, East Trenches Area, FINAL August 1993

  (The Pilot Test Plan and Site Specific Health and Safety Plans will be repeated for Sites 2 and 3)

6 3 3 Site No 2 Documents

- Soil Vapor Extraction Pilot Test Plan Site No 2, Enhanced Vapor Extraction of Organic Compounds with Electrical Subsurface Heating, East Trenches Area, Operable Unit 2, Final Pending

6 3 4 Soil Vapor (Gas) Survey

- Soil Vapor Survey Work Plan, Subsurface IM/IRA, 903 Pad, Mound and East Trenches Area, Operable Unit 2, FINAL January 12, 1993

6 4 QUALITY ASSURANCE RECORDS

QA records will be controlled in accordance with Field Document Control OPS- FO 02 and Quality Assurance Records Management 3-21000 ADM -17 01

6 5 INSPECTION

Quality affecting activities are subject to inspection by EG&G These inspections will be performed in accordance with EG&G Procedure 3-21000-ADM-10 02

6 6 OPERATIONAL READINESS REVIEW

All activities identified in this project management plan will have an Operational Readiness Review (ORR) before project commencement and will be in accordance with Readiness Review 3-21000-ADM 18 03

7 0 ENVIRONMENTAL EVALUATION AND PERMITS

7 1 ENVIRONMENTAL EVALUATION

The categorical exclusion for the OU2 RI includes the proposed OU2 IRA activities

7 2 PERMITS

The following permits are needed to operate in the Buffer Zone

- Excavation Permit (Soil Disturbance)
- Land Use Permit (Buffer Zone Access)
- Radiological Worker Permit (i e , if in a Radiation Controlled Area for Radiation Operations (RAD OPS)

8 0 PROCUREMENT PLAN

8 1 PROCUREMENT SCHEDULES

See Appendix A for the schedules of procurement activities and delivery of equipment to RFP

8 2 TASK ORDER CONTRACTS

Each subtask has a separate bid package for delivery of subcontractor services and vendor supplied equipment to RFP

- Subtask One –

  Site 1 Pilot Test Plan – Subcontractor Services
  Pilot Unit Procurement - Equipment Vendor Services

- Subtask Two –

  Soil Vapor Survey – Subcontractor Services

- Subtask Three –

  Pilot Unit Installation at Site 1 – Equipment Vendor Services

- Subtask Four –

  Site 1 Pilot Test – Subcontractor Services

- Subtask Five –

  Site 2 Pilot Test Plan – Subcontractor Services

9 0 TEST AND EVALUATION PLAN

9 1 SUMMARY OF INTERIM REMEDIAL ACTION (IRA) PILOT TEST PLAN

This section presents a summary of testing and evaluation that will occur during the pilot testing of SVE at Test Site No 1

9 1 1 Modifications to the Subsurface IM/IRAP

The pilot test program, to be managed using this document, reflects several modifications to the conceptual program presented in the Subsurface IM/IRAP (EG&G, 1992) These modifications were based on new information regarding the proposed test site This information became available after publication of the final Subsurface IM/IRAP Enhancements were also made to the proposed system design as work progressed Significant modifications are noted below, along with the rationale behind the changes It is important to note that additional modifications may be incorporated into future drafts of the test plan as new data becomes available The subsection of the test plan is reserved to inform the reader of all significant changes

9 1 1 1 Vapor Treatment Process

The test plan specifies that the vapor treatment procedures is to operate at less than atmospheric pressure as opposed to the positive pressure scenario presented in the IM/IRAP Negative pressures are achieved by placing the extraction blower(s) towards the end of the treatment train This configuration prevents contaminated vapor leaks before High Efficiency Particulate Air (HEPA) filtration and Granular Activated Carbon (GAC) adsorption treatment Instead, if a breach (i e , crack) in the process piping occurs, the negative pressure will cause atmospheric air to be "pulled" into the treatment train The test plan also specifies a dual blower configuration (rather than a single blower) for increased operating efficiency

9 1 1 2 Groundwater Recovery

The pilot test plan presents an expected groundwater recovery rate at the East Trenches (i e , IHSS 110) of 5 gpm in contrast to the 1 gpm extraction rate discussed in the Subsurface IM/IRAP This upward revision is based on pump test data for the East Trenches that became available after the IM/IRAP was finalized

9 1 1 3 Process Gas Stream

The pilot test plan specifies that the process gas stream is to be sampled at the exhaust stack to verify the absence of radioactive species as opposed to downstream of the in-line HEPA filters This modification has two primary advantages First, the vapors at the exhaust stack (i e , downstream of the GAC adsorption units) will be free of VOCs This configuration is an advantage from a H&S standpoint Operators will not be exposed to fugitive VOCs when removing sample filters for subsequent measurement of radioactivity Second, sampling at the exhaust stack requires a lower duty pump since the stream is at atmospheric pressure rather than at negative pressure

9 1 1 4 Air Injection Pilot Tests

The Subsurface IM/IRAP proposes only the testing of active air injection Separate tests would be conducted during pilot testing at Site 1 to examine injection of air at ambient temperature and air heated by an indirectly-fired heater The SVE test plan involves pilot tests with both passive and active air injection The active air injection specified in the test plan involves air that is heated directly by the energy imparted from the injection blower and not through an indirect heat source Modification of the strategy proposed in the Subsurface IM/IRAP was based on the following rationale, the heat imparted to the air stream by the blower eliminates the necessity of a heater In addition, an air driller would be necessary to cool the air stream leaving the blower to achieve an ambient temperature This action defeats the goal of enhancing volatilization through increasing the boiling point of the contaminants

9 1 2 Test Plan Organization

The OU2 Subsurface Test Plan is organized as follows

Section 1 0 provides an introduction and states the objectives of the IRA

Section 2 0 provides a characterization of the East Trenches, which includes descriptions of site background, geology, and hydrogeology

Section 3 0 describes the general design considerations and design basis which will be addressed when implementing the SVE technology

Section 4 0 outlines the construction specifications, performance requirements for the pilot SVE system vapor extraction vents, air injection vents, groundwater extraction wells, pressure monitoring probes, vapor manifolds, and sampling and analyses of soil and groundwater to be conducted during system installation

Section 5 0 summarizes the T-3 construction site preparations which will be performed before system installation, such as access road and groundwater storage tank constructions and subsequent equipment installation procedures

Section 6 0 describes system construction specifications, equipment performance and air monitoring requirements for the mobile pilot-scale vapor extraction unit The vapor extraction unit consists of positive displacement blowers, a de-mister, HEPA filters, and the vapor treatment system

Section 7 0 summarizes the nine pilot system tests to be conducted Test results will be used to evaluate the system's optimal operating configuration The sustained operation and post-pilot operation sampling, data collection and analysis programs are described

Section 8 0 outlines the data reporting and evaluation requirements for the pilot tests and the sustained operations

Section 9 0 provides the schedule for conducting the Subsurface IM/IRA pilot study in the East Trenches

The following appendices are in the Test Plan Appendix A consists of several engineering drawings detailing design of the pilot-scale vapor extraction unit The drawings address extraction/injection well and vapor treatment system corstruction Appendix B is reserved for future use Appendix C shows the soil boring logs that were used to create the hydrogeological concept models for the pilot test sites Appendix D lists the quality assurance procedures that will be followed during conduct of the soil vapor extraction pilot test program Appendix E includes the engineering calculations that provide the basis for the design of the vapor extraction pilot unit Appendix F provides a list of RFP SOPs that are applicable to the Subsurface IM/IRA Pilot Test Program The SOPs include procedures for sampling, well construction, and decontamination

Official EG&G RFP correspondence such as external letters or interoffice memorandums are processed by a departmental secretary for logging and editing For tracking purposes, each correspondence will be assigned log numbers

9 2 FINAL REPORT CONTENTS

The final report must address the goals and objectives of the IM/IRAP An initial draft and final draft report must be prepared and reviewed by EG&G before issuance to DOE, EPA and CDH of a final report

10 0 REFERENCES

Conduct of Engineering Manual, EG&G RFP Facilities Engineering Department

Configuration Change Control Procedure (CCCP), EG&G RFP Documents Management Department

Drafting Manual, EG&G RFP Facilities Engineering Department

EG&G RFP Environmental Restoration Department Operable Unit No 2 Subsurface Interim Measures/Interim Remedial Action, *Soil Vapor Survey Work Plan*, 10/29/92

EG&G RFP Environmental Restoration Department Operable Unit No 2 Subsurface Interim Measures/Interim Remedial Action, *Pilot Test Plan Soil Vapor Extraction Technology*, 10/29/92

EG&G RFP Environmental Restoration Department, Operable Unit No 2 Health and Safety Plan, EG&G RFP Environmental Restoration Department

Environmental Management Administrative Procedures Manual 3-21000-ADM, EG&G RFP Environmental Restoration Department

Environmental Management Technical Contract Management Guidance Document 3-21000-GD-01, EG&G RFP Environmental Restoration Department

Environmental Management Radiological Guidelines Manual, 3-21000 OPS-EMRG, EG&G RFP Environmental Restoration Department

Environmental Management Sitewide Quality Assurance Project Plan (QAPjP), EG&G RFP Environmental Restoration Department

Environmental Management Standard Operating Procedures (SOP) 5-21000, EG&G RFP Environmental Restoration Department, OPS-FO Field Operations, OPS-GT Geotechnical, OPS-GW Groundwater

Environmental Management Quality Assurance Plan Description (QAPD), 21000 QAPD, EG&G RFP Environmental Restoration Department

General Design Criteria Manual, DOE Order 6431 A, EG&G RFP Facilities Engineering Department

Operable Unit No 2 RFI/RI Work Plan (Alluvial), EG&G RFP Environmental Restoration Department

Operable Unit No 2 Subsurface Interim Measures/Interim Remedial Action Plan/Environmental Assessment and Decision Document, DOE EA-0625, 9/10/92 2 volumes

Prevention and Protection from Contaminant Dispersion (PPCD), EG&G RFP Environmental Restoration Department

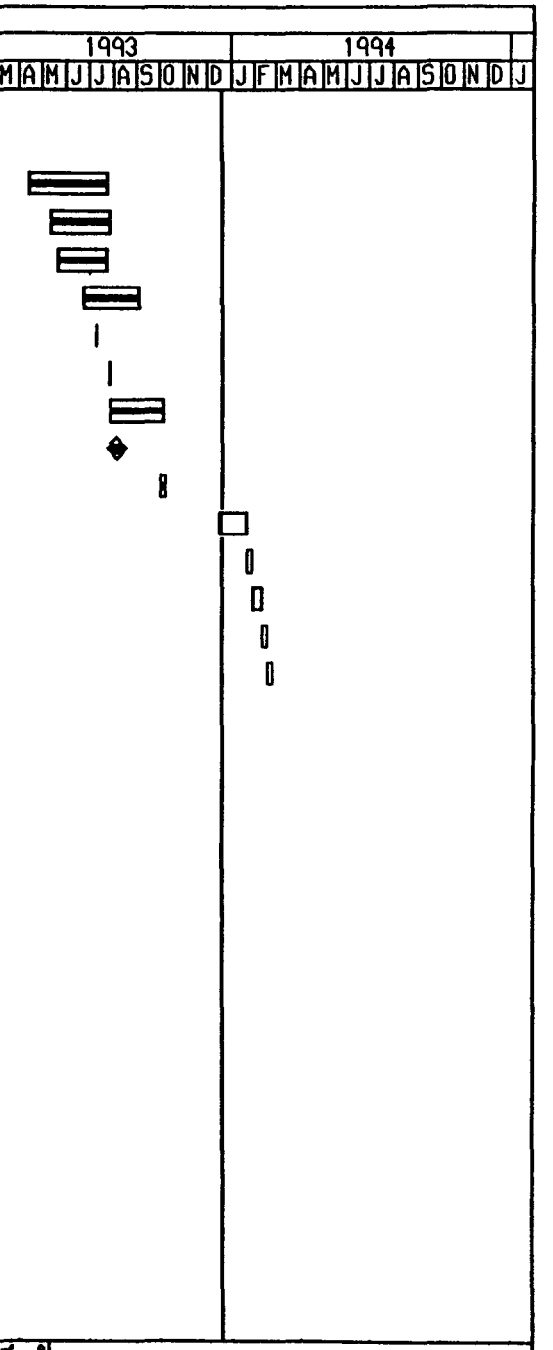
Rocky Flats Plant Engineering Standards, 6 vol , EG&G RFP Facilities Engineering Department

Transportation Manual, EG&G RFP Traffic Department

APPENDIX A

Project Gantt Chart

ACTIVITY ID	ACTIVITY DESCRIPTION	REM DUR	TOTL FLT	EARLY START	EARLY FINISH
FABRICATION MOBILE VAPOR EXTRACTION UNIT					
1830	FABRICATION OF SVE BEGINS BY FABRICATOR	0		12APR93A	23JUL93A
1690	DESIGN OF SVE SYSTEMS	0		11MAY93A	26JUL93A
1850	INSTALLATION OF EQUIPMENT IN SVE TRAILER	0		21MAY93A	23JUL93A
1900	SUBMITTAL OF SVE TRAILER O/M MANUALS	0		23JUN93A	3SEP93A
1715	DOCUMENTS ACCOMPANING SHIPMENTS	0		9JUL93A	9JUL93A
1870	FABRICATION OF SVE COMPLETE	0		26JUL93A	26JUL93A
1880	FACTORY SO TEST OF SVE TRAILER	0		27JUL93A	4OCT93A
1920	SVE DELIVERY TO RFP	0			4AUG93A
1901	EG&G REVIEW OF O/M MANUALS	0		30SEP93A	6OCT93A
1903	SUBCONT ADDENDED O/M MAUNUAL/RE-CONFIG FOR NAPL	18	209	16DEC93A	20JAN94
1906	EG&G REVIEW OF O/M MAUNUAL	5	209	21JAN94	27JAN94
1909	SUB-CONTRACTOR INCORP OF COMMENTS TO O/M MANUAL	10	209	28JAN94	10FEB94
1912	EG&G APPROVAL OF O/M MAUNUAL	5	209	11FEB94	17FEB94
1915	FINALIZE O/M MANUALS	3	209	18FEB94	22FEB94



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Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

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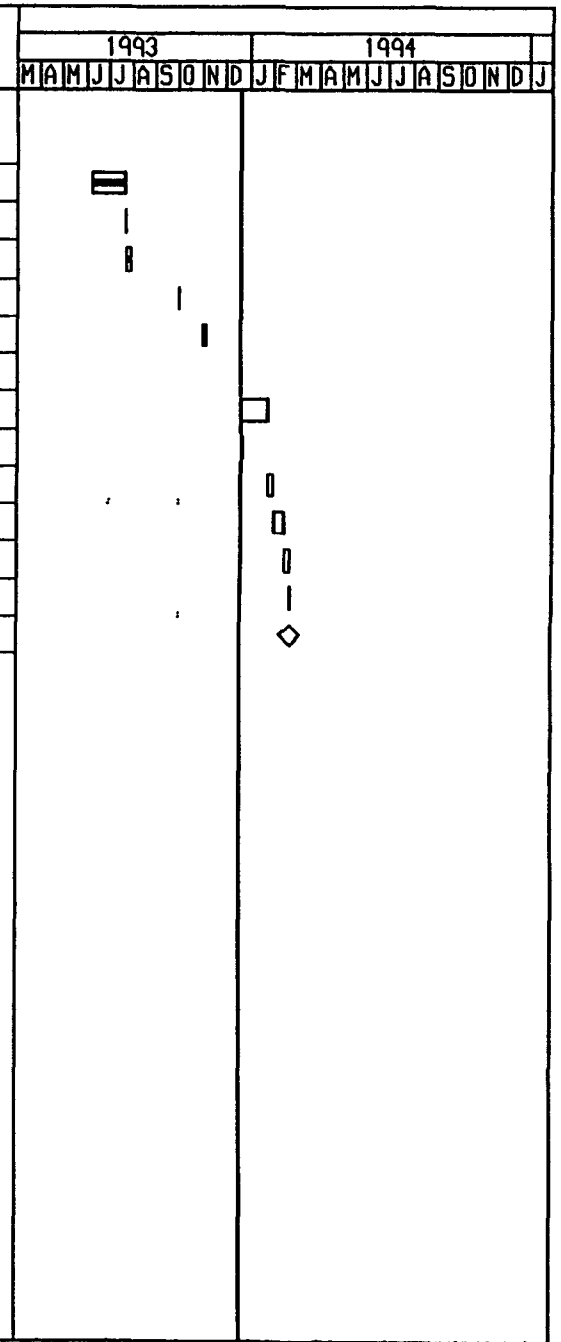
EG&G ROCKY FLATS
OU#2 SUBSURFACE IRA

Date	Revision	Checked	Approved

ACTIVITY ID	ACTIVITY DESCRIPTION	REM DUR	TOTL FLT	EARLY START	EARLY FINISH
HEALTH & SAFETY FOR IRA					
1483	PREPARATION OF SAFETY ANALYSIS DOCUMENT BY SA	0		7JUN93A	22JUL93A
1484	RECEIPT OF SAD BY ES&E	0		22JUL93A	22JUL93A
1486	REVIEW OF SAD BY ES&E	0		23JUL93A	28JUL93A
1488	VERIFICATION OF SAD	0		30SEP93A	30SEP93A
1170	H&S COMMENTS ON AMMENDED H&S PLAN - SVE	0		1NOV93A	5NOV93A
1250	INCORPORATE COMMENTS ON AMMENDED H&S PLAN - SVE	1	32	20DEC93	20DEC93
1490	ADDENDUM OF SAD DUE TO NAPL	20	209	20DEC93	24JAN94
1320	H&S FINAL APPROVAL - SVE	1	32	21DEC93	21DEC93
1492	REVIEW OF SAD BY ES&E	5	209	25JAN94	31JAN94
1494	INCORPORATION OF ES&E COMMENTS TO SAD	10	209	1FEB94	14FEB94
1496	VERIFICATION OF COMMENTS	5	209	15FEB94	21FEB94
1498	FINALIZATION OF SAD	1	209	22FEB94	22FEB94
1500	FINALIZE SAD	0	209		22FEB94



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EG&G ROCKY FLATS
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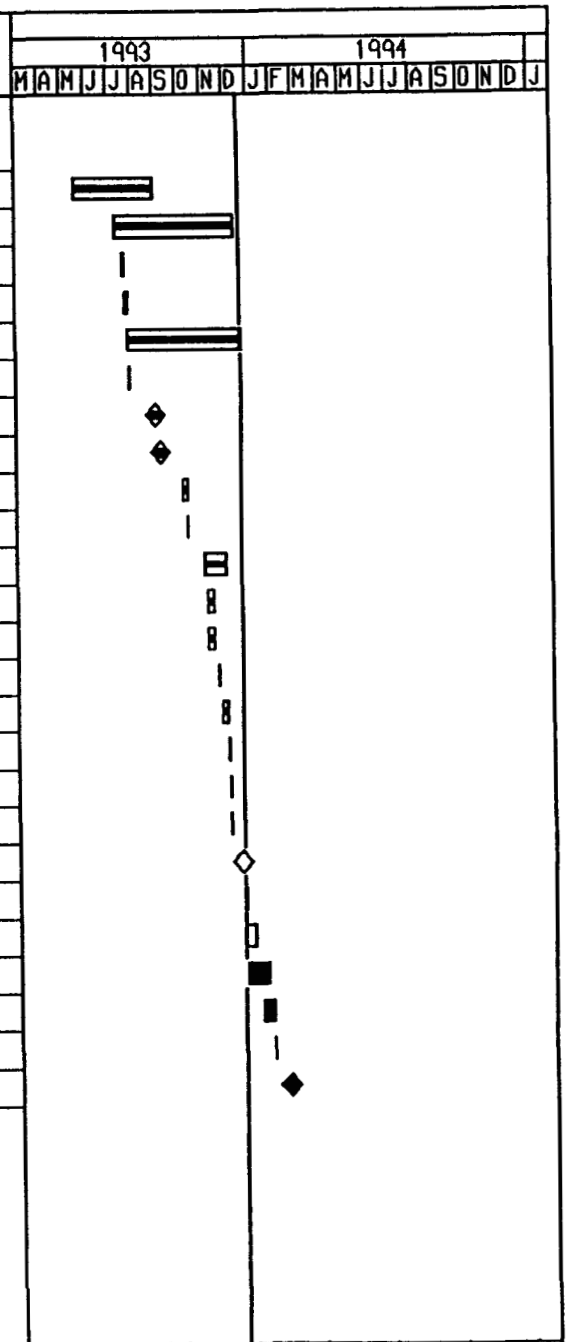
Date	Revision	Checked	Approved

ACTIVITY ID	ACTIVITY DESCRIPTION	REM DUR	TOTL FLT	EARLY START	EARLY FINISH
EE&T PROJECT MANAGEMENT					
2175	PREPARE FOR READINESS REVIEW	0		18MAY93A	30AUG93A
1860	MATERIAL QA DOCUMENT COMPILED	0		9JUL93A	14DEC93A
1650	RFP CONSTRUCTION MGMT OF SVE IMP CONTRACT BEGINS	0		20JUL93A	21JUL93A
1120	PREPARED EG&G FIELD PERMITS	0		23JUL93A	27JUL93A
1101	REVISE PMP	2	248	26JUL93A	21DEC93
1121	FIELD PERMITS OUT FOR APPROVAL	0		28JUL93A	28JUL93A
2176	COMPLETE READINESS REVIEW	0			31AUG93A
1122	FIELD PERMITS APPROVAL	0			6SEP93A
1102	EG&G PMP REVIEW	0		6OCT93A	11OCT93A
1103	MODIFY PMP AS NEEDED	0		12OCT93A	12OCT93A
2180	PREPARE FOR READINESS REVIEW BASED ON RECONFIG	0		1NOV93A	30NOV93A
1105	PREPARE ENGINEERING DESIGN PACKAGE	0		5NOV93A	11NOV93A
1000	DEVELOP SCOPE FOR TECH MEMORANDUM TO ADRESS NAPL	0		5NOV93A	12NOV93A
2190	TIE CONFERENCE TOUR	0		18NOV93A	18NOV93A
1010	SOLICIT BIDS FOR SUBCONTRCTOR TO WRITE TECH MEMO	0		22NOV93A	30NOV93A
1020	EVALUATE BIDS FOR SUBCONTRACTOR TECH MEMO	0		1DEC93A	2DEC93A
1030	AWARD TECH MEMO REPORT	0		3DEC93A	3DEC93A
1440	RFP CONST MGMT RECIEVES IWCP AND FIELD PERMITS	0		3DEC93A	3DEC93A
1861	QA DOCUMENT IN PM FILE	0	250		17DEC93
1106	DISTRIBUTION OF ENGINEERING DESIGN PACKAGE	2	-8	20DEC93	21DEC93
2182	CONDUCT READINESS REVIEW/RECONFIGURATION	5	29	20DEC93	3JAN94
1107	EG&G REVIEW OF ENGINEERING DESIGN PACKAGE	15	-8	22DEC93	19JAN94
1108	INCORP EG&G COMMENTS INTO THE ENGR DESIGN PKG	10	-8	12JAN94	25JAN94
1109	APPROVAL ENGINEERING DESIGN PACKAGE	1	-8	26JAN94	26JAN94
2184	COMPLETE READINESS REVIEW/RECONFIGURATION	0	-1		14FEB94



Plot Date 20DEC93
Data Date 20DEC93
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Activity Bar/Early Dates
Critical Activity
Progress Bar
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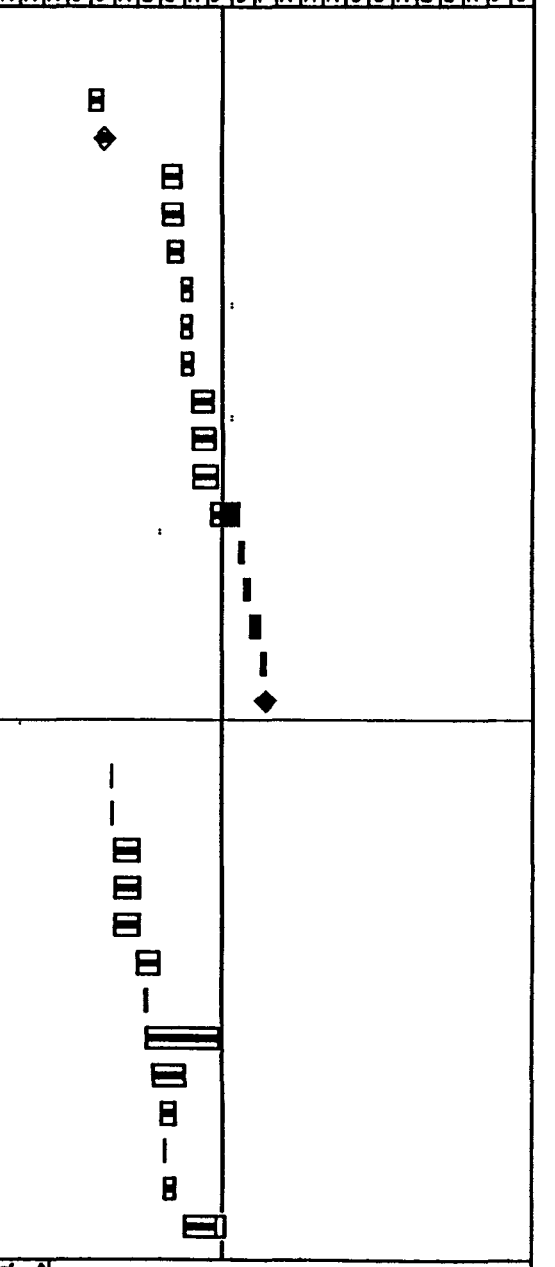
EG&G ROCKY FLATS
OU#2 SUBSURFACE IRA

Date	Revision	Checked	Approved

ACTIVITY ID	ACTIVITY DESCRIPTION	REM DUR	TOTL FLT	EARLY START	EARLY FINISH
IMPLEMENTATION AND PILOT TEST INSTALLATION PLANNING DOCUMENTS					
1660	CONTRACTOR PREPARES & SUBMITS IMP PLAN FOR APPVL	0		29JUN93A	16JUL93A
1661	EG&G REVIEW & APPRVL OF IMPLEM PLAN	0			19JUL93A
1665	PREPARE & SUBMIT DRAFT CNST QC PLAN	0		4OCT93A	27OCT93A
1662	PREPARE & SUBMIT DRAFT DATA MNGMNT PLAN	0		4OCT93A	29OCT93A
1669	PREPARE & SUBMIT DRAFT SCIENT NOTE PL	0		11OCT93A	29OCT93A
1663	EG&G REVIEW DMP	0		28OCT93A	1ONOV93A
1667	EG&G REVIEW OF CQCP	0		28OCT93A	1ONOV93A
1671	EG&G REVIEW OF SNP	0		29OCT93A	11NOV93A
1668	PREPARE & SUBMIT FINAL CQCP	0		11NOV93A	9DEC93A
1664	PREPARE & SUBMIT FINAL DMP	0		11NOV93A	1ODEC93A
1672	PREPARE & SUBMIT FINAL SNP	0		12NOV93A	14DEC93A
1040	DEVELOP TECHNICAL MEMORANDUM FOR SVE, SITE #1	11	-1	6DEC93A	11JAN94
1050	TECH MEMO TO EG&G FOR COMMENTS & REVIEW	5	-1	12JAN94	18JAN94
1060	INCORPORATE EG&G COMMENTS	5	-1	19JAN94	25JAN94
1070	TECH MEMO TO DOE FOR COMMENTS & REVIEW	10	-1	26JAN94	8FEB94
1080	INCORPORATE DOE COMMENTS	4	-1	9FEB94	14FEB94
1090	SUBMIT REVISED TECH MEMO TO EPA/CDH	0	-1		14FEB94
FIELD CONSTRUCTION ACTIVITIES					
1760	NOTICE TO MOBILIZE	0		29JUL93A	29JUL93A
2100	SITE PREP (GRAVEL ROADS, GENERATOR SETUP)	0		29JUL93A	30JUL93A
2070	LOCATE AND INSTALL ALLUVIAL WELLS (2)	0		2AUG93A	3SEP93A
2080	LOCATE AND INSTALL BEDROCK WELLS (2)	0		2AUG93A	3SEP93A
2090	LOCATE AND INSTALL PRESSURE PROBES (5)	0		2AUG93A	3SEP93A
2150	INSTALL VAPOR EXT MANIFOLD PHASE I	0		15EP93A	30SEP93A
2115	TRAILER SETUP	0		10SEP93A	13SEP93A
2155	DEVELOP AND SAMPLE WELLS	0		13SEP93A	16DEC93A
2171	IMPLEMENT ANALYTICAL CONTRACT	0		20SEP93A	1NOV93A
2173	PROCURE AND INSTALL DATA LOGGING EQUIPMENT	0		30SEP93A	20OCT93A
2110	SETUP GW STORAGE TANK 101	0		5OCT93A	6OCT93A
2113	INSTALL PIPING FOR GW TANK 101	0		5OCT93A	19OCT93A
1670	CONTRACTOR PERSONNEL TRAINING	4	30	1NOV93A	23DEC93



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Activity Bar/Early Dates
Critical Activity
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EG&G ROCKY FLATS
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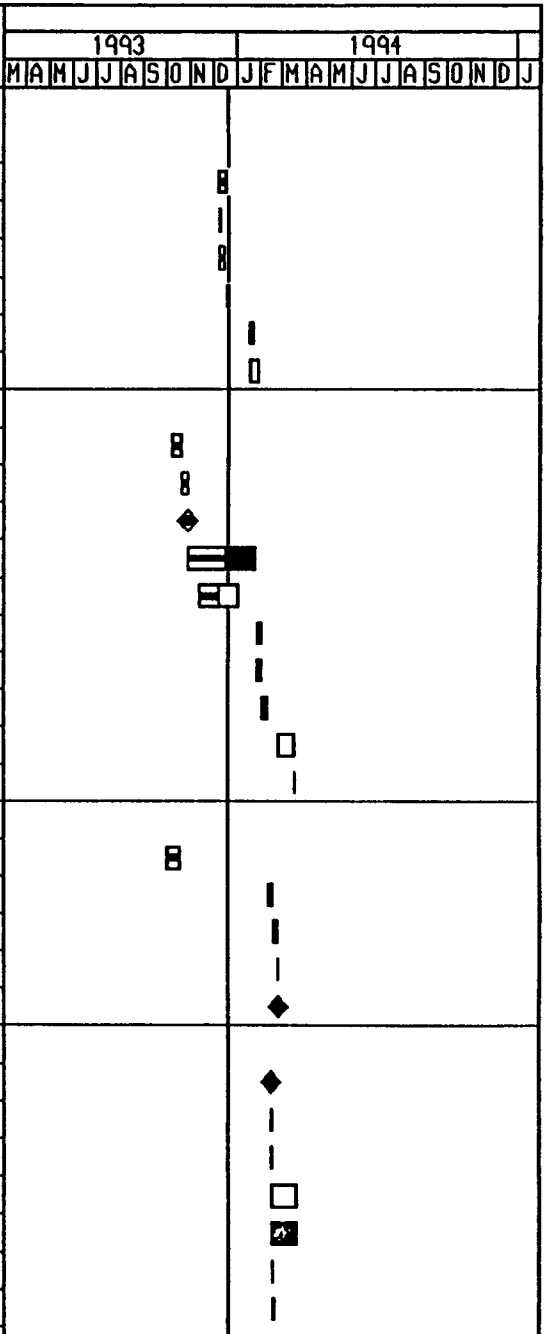
ACTIVITY ID	ACTIVITY DESCRIPTION	REM DUR	TOTL FLT	EARLY START	EARLY FINISH
IMPLEMENTATION AND PILOT TEST INSTALLATION FIELD CONSTRUCTION ACTIVITIES					
2151	INSTALL VAPOR EXT MANIFOLD PHASE II	0		6DEC93A	17DEC93A
2111	SETUP GW STORAGE TANK 102	0		8DEC93A	9DEC93A
2114	INSTALL PIPING FOR GW TANK 102	0		8DEC93A	14DEC93A
2160	INSTALL WELL PUMPS/GW PIPING (HT TRACING), LVL	1	28	17DEC93A	20DEC93
2152	INSTALL VAPOR EXT MANIFOLD PHASE II (RE-START)	5	226	17JAN94	21JAN94
2112	HYDROSTATIC TEST OF GW STORATE TANK	10	226	17JAN94	28JAN94
RECONFIGURATION DESIGN & INSTALLATION					
2140	SOLICIT BIDS FOR ORGANIC ANALYZER (EG&G)	0		7OCT93A	20OCT93A
2142	EVALUATION OF BIDS FOR ORGANIC ANALYZER (EG&G)	0		21OCT93A	27OCT93A
2144	PURCHASE ORGANIC ANALYZER (EG&G)	0			27OCT93A
2146	ORGANIC ANALYZER DELIVERY (EG&G)	20	-6	28OCT93A	24JAN94
2128	PREPARE RECONFIGURATION DESIGN (RTG)	5	8	12NOV93A	3JAN94
2167	NEW VALVING INSTALLATION (RTG)	5	-8	27JAN94	2FEB94
2168	INSTALL ORGANIC ANALYZER & AIR FLW METR (RTG)	5	-8	27JAN94	2FEB94
2169	REVISE VAPOR EXTRACTION PIPING	5	-8	3FEB94	9FEB94
2239	CONTRACTOR PREPAIRS AS-BUILTS	15	192	24FEB94	16MAR94
2240	CONSTRUCTION AS-BUILTS TO PROJECT QA FILE	1	192	17MAR94	17MAR94
SO TESTING					
2199	DEVELOP SO TEST PROCEDURES	0		30SEP93A	18OCT93A
2170	SO TRAINING	5	-8	10FEB94	16FEB94
2210	SO TESTING OF SVE @ SITE #1 E TRENCH	4	-8	17FEB94	22FEB94
2200	READINESS CHECK BEFORE SYSTEM OPERATIONS	1	-8	23FEB94	23FEB94
2220	SO TEST DOCUMENTATION TO PM FILES & EM QA	0	-8		23FEB94
PILOT TEST					
2251	START PILOT TESTS	0	0	14FEB94	
2254	PILOT TESTS #1	1	0	14FEB94	14FEB94
2257	PILOT TESTS #1 (4 HRS)	1	215	14FEB94	14FEB94
2250	PILOT TESTS SITE #1 - EAST TRENCHES AREA	25	190	14FEB94	18MAR94
2253	PILOT TESTS 1-9	25	0	14FEB94	18MAR94
2255	STANDBY/EVALUATION #1	1	0	15FEB94	15FEB94
2256	PILOT TESTS #2 (48HRS)	3	0	16FEB94	18FEB94



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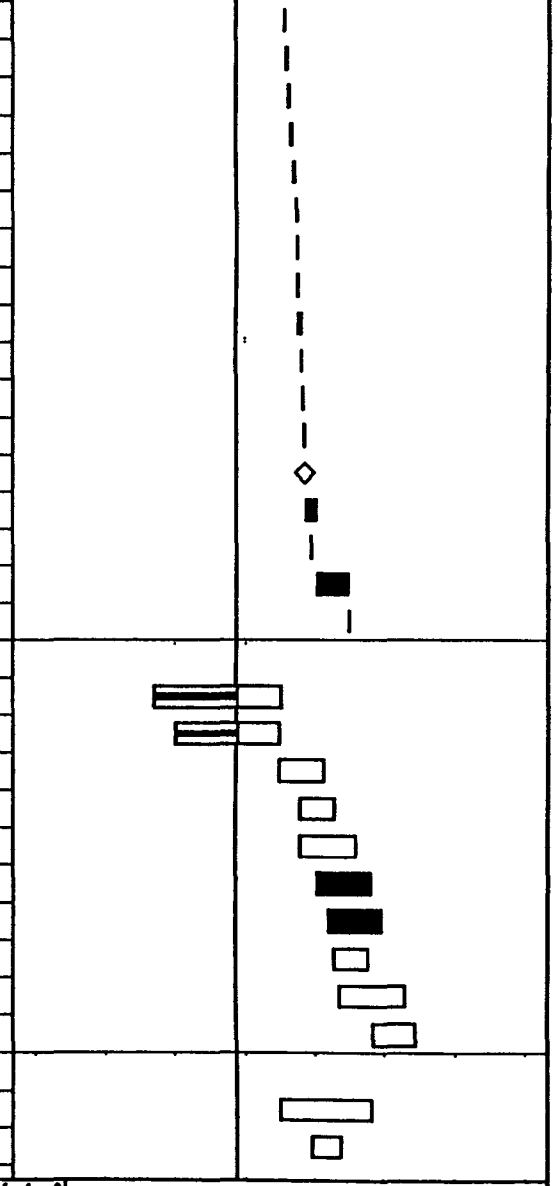
Date	Revision	Checked	Approved

ACTIVITY ID	ACTIVITY DESCRIPTION	REM DUR	TOTL FLT	EARLY START	EARLY FINISH
IMPLEMENTATION AND PILOT TEST INSTALLATION PILOT TEST					
2258	STANDBY/EVALUATION #2	1	0	21FEB94	21FEB94
2259	PILOT TESTS #3 (48 HRS)	3	0	22FEB94	24FEB94
2260	STANDBY/EVALUATION #3	2	0	25FEB94	28FEB94
2261	PILOT TESTS #4 (48 HRS)	3	0	1MAR94	3MAR94
2262	STANDBY/EVALUATION #4	2	0	4MAR94	7MAR94
2263	PILOT TESTS #5 (16 HRS)	1	0	8MAR94	8MAR94
2264	PILOT TESTS #6 (16 HRS)	1	0	9MAR94	9MAR94
2265	PILOT TESTS #7 (16 HRS)	1	0	10MAR94	10MAR94
2266	STANDBY/EVALUATION #5-7	2	0	11MAR94	14MAR94
2267	PILOT TESTS #8 (16 HRS)	1	0	15MAR94	15MAR94
2268	PILOT TESTS #9 (16 HRS)	1	0	16MAR94	16MAR94
2269	STANDBY/EVALUATION #8-9	2	0	17MAR94	18MAR94
2350	COMPLETE PILOT TESTS (1-9) SITE #1	0	190		18MAR94
2270	STANDBY/EVALUTION FOR SUSTAINED OPERATIONS TESTS	10	0	21MAR94	4APR94
2380	EG&G NOTICE TO PROCEED-SUS OP TESTS	1	185	28MAR94	28MAR94
3000	SUSTAINED OPERATIONS TESTS	30	0	5APR94	16MAY94
2400	DEMOBILIZE AND MOVE TO SITE #2	1	150	17MAY94	17MAY94
SAMPLE ANALYSIS/RFEDS (EG&G)					
2330	CHARACTERIZATION OF SOIL SAMPLES	39	168	3SEP93A	18FEB94
2325	CHARACTERIZE GW SAMPLES	35	172	30SEP93A	14FEB94
2300	ANALYSIS OF EXTRACTED SOIL GAS TESTS 1-9	43	12	14FEB94	14APR94
2301	DATA INCORPORATION INTO EG&G RFEDS TESTS 1-9	33	138	14MAR94	28APR94
2305	DATA VALIDATION OF SOIL GAS SAMPLES	53	12	14MAR94	26MAY94
3010	ANALYSIS OF EXTRACTED SOIL GAS SUS OP TESTS	50	0	5APR94	14JUN94
3020	DATA INCORPORATION INTO RFEDS SUS OP TESTS	50	0	19APR94	28JUN94
2306	UPLOAD VALIDATION DATA INTO RFEDS	33	12	26APR94	10JUN94
3030	DATA VAL OF SOIL GAS SAMPLES SUS OP TESTS	60	46	3MAY94	27JUL94
3031	UPLOAD VALIDATED DATA INTO RFEDS SUS OP. TESTS	40	46	15JUN94	10AUG94
REPORT PREPARATION					
4000	DRAFT PILOT TEST SITE #2 (EG&G)	85	121	14FEB94	14JUN94
2302	DOWNLOAD OF NON-VALID DATA FROM RFEDS TESTS 1-9	28	138	28MAR94	5MAY94



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Data Date 20DEC93
Project Start 1JAN92
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Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

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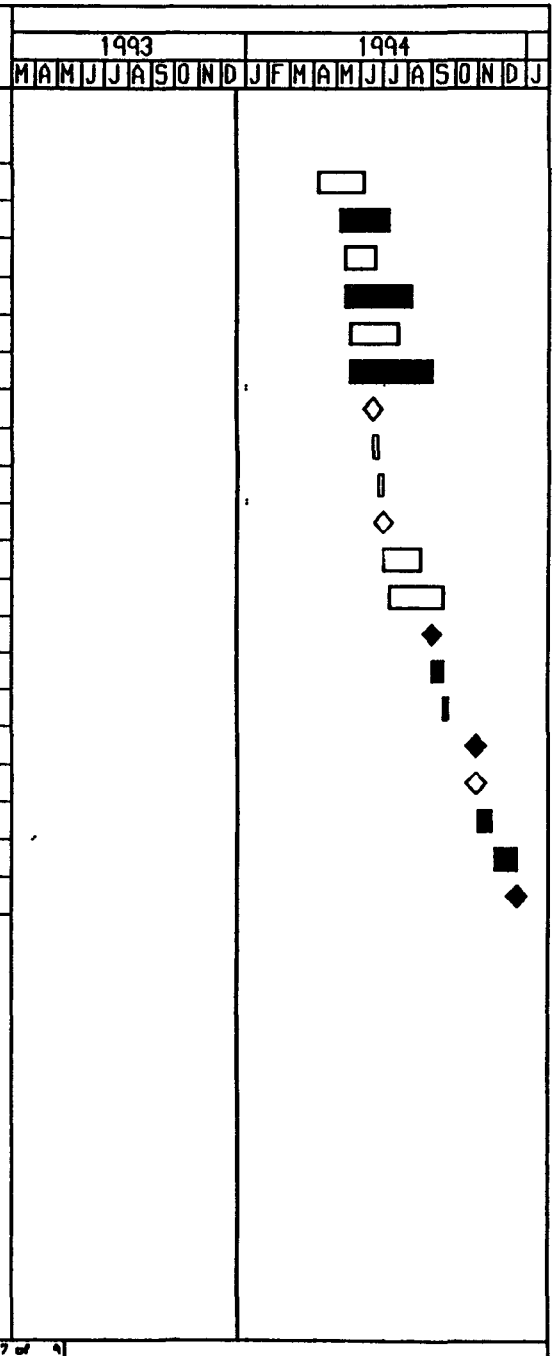
EG&G ROCKY FLATS
OU#2 SUBSURFACE IRA

Date	Revision	Checked	Approved

ACTIVITY ID	ACTIVITY DESCRIPTION	REM DUR	TOTL FLT	EARLY START	EARLY FINISH
IMPLEMENTATION AND PILOT TEST INSTALLATION REPORT PREPARATION					
2303	COMPILE DRAFT DATA FOR TESTS 1-9	43	138	5APR94	3JUN94
3040	DOWNLOAD OF NON-VAL FROM RFEDS SUS OP TESTS	45	0	3MAY94	6JUL94
2307	DOWNLOAD OF VALID DATA FROM RFEDS TESTS 1-9	28	12	10MAY94	17JUN94
3060	COMPILE DRAFT DATA SUS. OP TESTS	60	0	10MAY94	3AUG94
2315	COMPILE VALID DATA (TESTS 1-9)	43	12	17MAY94	18JUL94
3070	DRAFT PILOT TEST REPORT SUS OP TESTS	75	0	17MAY94	31AUG94
4010	SUB DRAFT PILOT TEST SITE #2 PLAN TO EG&G/DOE	0	131		14JUN94
4020	EG&G & DOE REVIEW	5	121	15JUN94	21JUN94
4030	INCORPORATE EG&G & DOE REVIEW COMMENTS	5	121	22JUN94	28JUN94
4040	SUBMIT FINAL PILOT TEST SITE #2 PLAN	0	121		28JUN94
3050	DOWNLOAD OF VAL FROM RFEDS SUS OP TESTS	35	46	29JUN94	17AUG94
3061	INCORPORATE VALIDATED DATA SUS OP TESTS	50	46	7JUL94	15SEP94
3080	SUBMIT DRAFT PILOT TEST REPORT TO EG&G/DOE	0	0		31AUG94
3090	EG&G & DOE REVIEW	10	0	1SEP94	15SEP94
3100	INCORPORATE EG&G & DOE REVIEW COMMENTS	5	0	16SEP94	22SEP94
3110	SUBMIT DRAFT FINAL PILOT TEST REPORT TO EPA/CDH	0	0		28OCT94
3111	SUB FINAL PILOT TEST RPT TO EPA/CDH (TESTS 1-9)	0	35		28OCT94
3120	EPA/CDH COMMENTS	15	0	31OCT94	18NOV94
3130	INCORPORATE EPA/CDH REV COMMENTS RESP SUMMMARY	20	0	21NOV94	20DEC94
3140	SUBMIT FINAL PILOT TEST REPORT TO EPA/CDH	0	0		20DEC94



Plot Date 20DEC93
Data Date 20DEC93
Project Start 1JAN92
Project Finish 20DEC94

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Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

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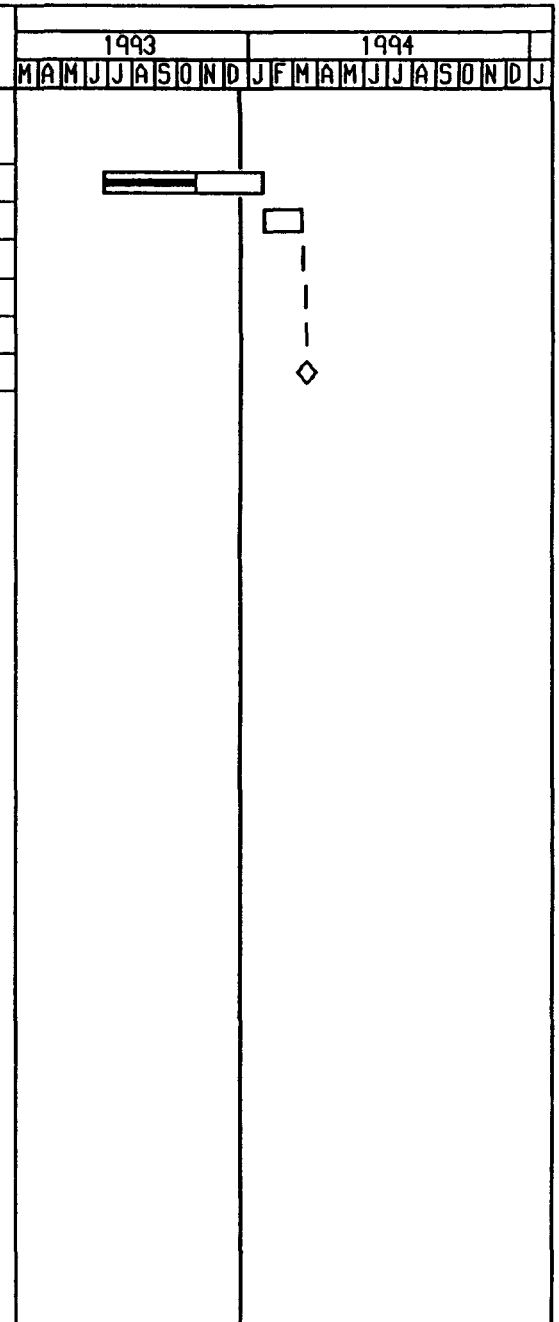
EG&G ROCKY FLATS
OU#2 SUBSURFACE IRA

Date	Revision	Checked	Approved

ACTIVITY ID	ACTIVITY DESCRIPTION	REM DUR	TOTL FLT	EARLY START	EARLY FINISH
SITE #2 LOCATION SELECTION					
2410	DRAFT PILOT TEST PLAN SITE #2 TO EPA/CDH	17	193	25JUN93A	19JAN94
2420	EPA/CDH COMMENTS INCORPORATE IN PILOT TEST PLAN	36	193	20JAN94	10MAR94
2430	PREPARE FINAL PILOT TEST PLAN SITE #2	1	193	11MAR94	11MAR94
2440	SUBMIT FINAL PILOT TEST PLAN SITE #2 TO DOE	1	193	14MAR94	14MAR94
2450	SUBMIT FINAL PILOT TEST PLAN SITE #2 TO EPA/CDH	1	193	15MAR94	15MAR94
2460	EPA/CDH APPROVAL PILOT TEST PLAN SITE #2	0	193		15MAR94



Plot Date 20DEC93
Data Date 20DEC93
Project Start 1JAN92
Project Finish 20DEC94

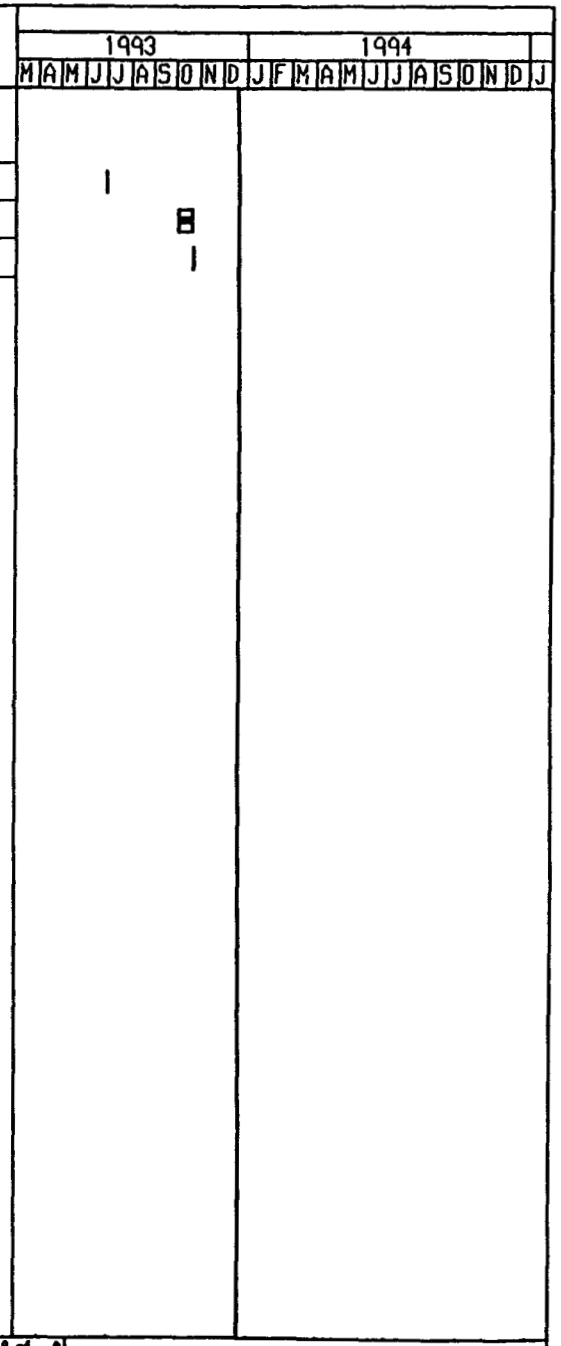
Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

Sheet 8 of 9

EG&G ROCKY FLATS
OU#2 SUBSURFACE IRA

Date	Revision	Checked	Approved

ACTIVITY ID	ACTIVITY DESCRIPTION	REM DUR	TOTL FLT	EARLY START	EARLY FINISH
CONTRACT NEGOTIATIONS					
1519	LETTER CONTRACT IN PLACE	0		28JUN93A	28JUN93A
1520	CONTRACT NEGOTIATIONS	0		30SEP93A	20OCT93A
1610	AWARD SVE IMPLEMENTATION CONTRACT	0		21OCT93A	21OCT93A



Plot Date 20DEC93
Data Date 20DEC93
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Project Finish 20DEC94

Activity Bar/Early Dates
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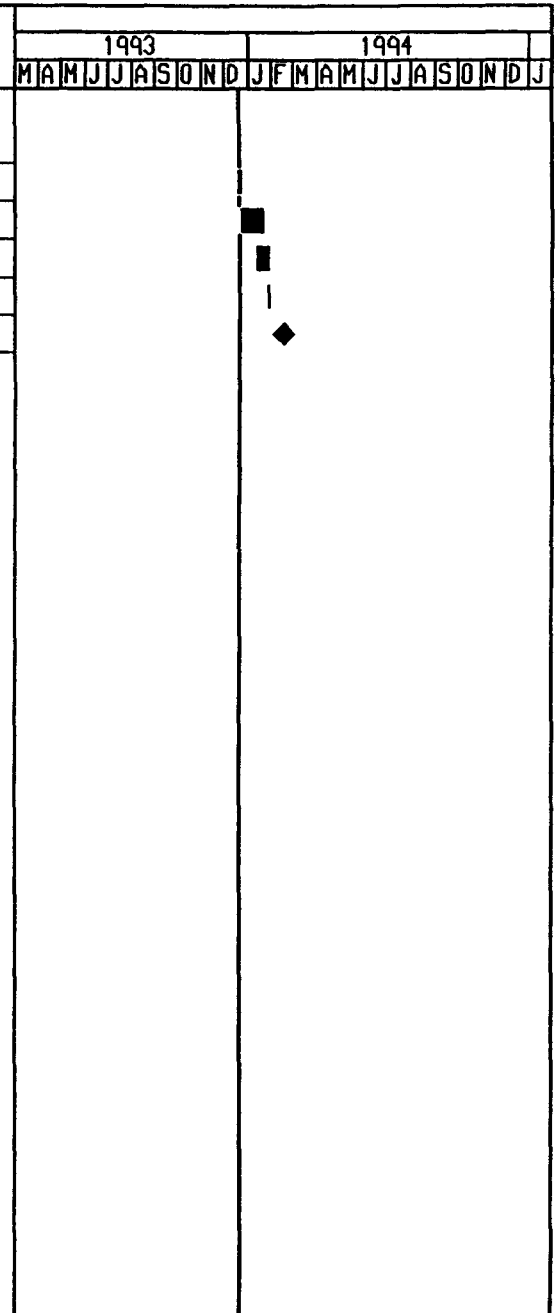
OU2R

Sheet 1 of 1

EG&G ROCKY FLATS
OU#2 SUBSURFACE IRA

Date	Revision	Checked	Approved

ACTIVITY ID	ACTIVITY DESCRIPTION	REM DUR	TOTL FLT	EARLY START	EARLY FINISH
EE&T PROJECT MANAGEMENT					
1106	DISTRIBUTION OF ENGINEERING DESIGN PACKAGE	2	-8	20DEC93	21DEC93
1107	EG&G REVIEW OF ENGINEERING DESIGN PACKAGE	15	-8	22DEC93	19JAN94
1108	INCORP EG&G COMMENTS INTO THE ENGR DESIGN PKG	10	-8	12JAN94	25JAN94
1109	APPROVAL ENGINEERING DESIGN PACKAGE	1	-8	26JAN94	26JAN94
2184	COMPLETE READINESS REVIEW/RECONFIGURATION	0	-1		14FEB94



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Project Finish 20DEC94

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Activity Bar/Early Dates
Critical Activity
Progress Bar
Milestone/Flag Activity

OU2H

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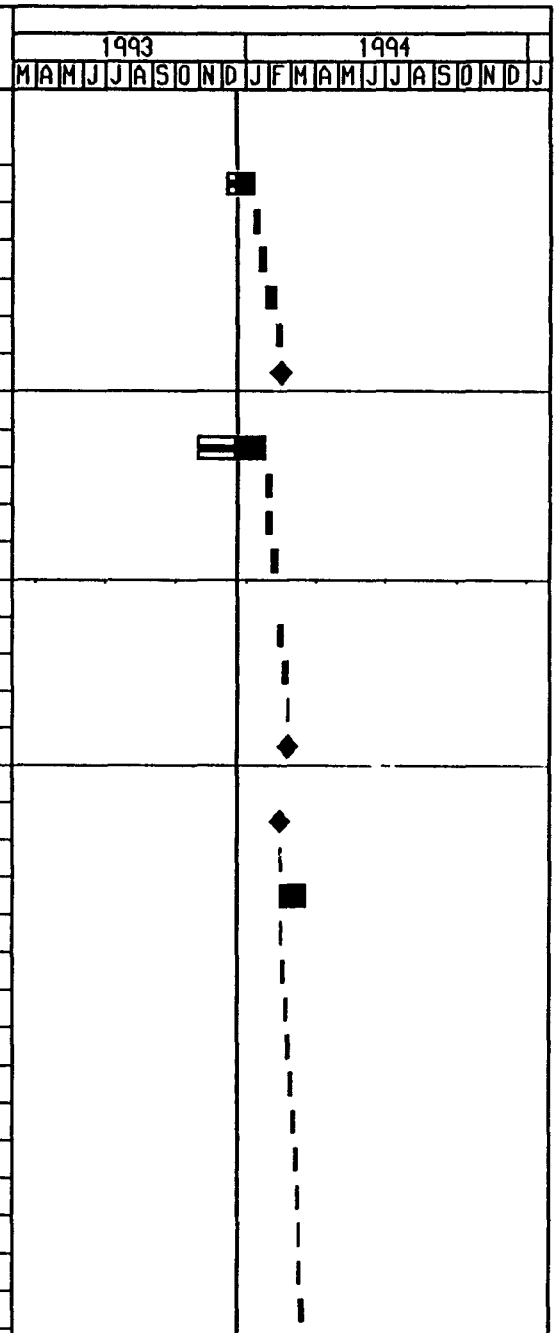
EG&G ROCKY FLATS
OU#2 SUBSURFACE IRA
CRITICAL PATH ACTIVITIES

Date	Revision	Checked	Approved

ACTIVITY ID	ACTIVITY DESCRIPTION	REM DUR	TOTL FLT	EARLY START	EARLY FINISH
IMPLEMENTATION AND PILOT TEST INSTALLATION PLANNING DOCUMENTS					
1040	DEVELOP TECHNICAL MEMORANDUM FOR SVE, SITE #1	11	-1	6DEC93A	11JAN94
1050	TECH MEMO TO EG&G FOR COMMENTS & REVIEW	5	-1	12JAN94	18JAN94
1060	INCORPORATE EG&G COMMENTS	5	-1	19JAN94	25JAN94
1070	TECH MEMO TO DOE FOR COMMENTS & REVIEW	10	-1	26JAN94	8FEB94
1080	INCORPORATE DOE COMMENTS	4	-1	9FEB94	14FEB94
1090	SUBMIT REVISED TECH MEMO TO EPA/CDH	0	-1		14FEB94
RECONFIGURATION DESIGN & INSTALLATION					
2146	ORGANIC ANALYZER DELIVERY (EG&G)	20	-6	28OCT93A	24JAN94
2167	NEW VALVING INSTALLATION (RTG)	5	-8	27JAN94	2FEB94
2168	INSTALL ORGANIC ANALYZER & AIR FLW METR (RTG)	5	-8	27JAN94	2FEB94
2169	REVISE VAPOR EXTRACTION PIPING	5	-8	3FEB94	9FEB94
SO TESTING					
2170	SO TRAINING	5	-8	10FEB94	16FEB94
2210	SO TESTING OF SVE @ SITE #1 E TRENCH	4	-8	17FEB94	22FEB94
2200	READINESS CHECK BEFORE SYSTEM OPERATIONS	1	-8	23FEB94	23FEB94
2220	SO TEST DOCUMENTATION TO PM FILES & EM QA	0	-8		23FEB94
PILOT TEST					
2251	START PILOT TESTS	0	0	14FEB94	
2254	PILOT TESTS #1	1	0	14FEB94	14FEB94
2253	PILOT TESTS 1-9	25	0	14FEB94	18MAR94
2255	STANDBY/EVALUATION #1	1	0	15FEB94	15FEB94
2256	PILOT TESTS #2 (48HRS)	3	0	16FEB94	18FEB94
2258	STANDBY/EVALUATION #2	1	0	21FEB94	21FEB94
2259	PILOT TESTS #3 (48 HRS)	3	0	22FEB94	24FEB94
2260	STANDBY/EVALUATION #3	2	0	25FEB94	28FEB94
2261	PILOT TESTS #4 (48 HRS)	3	0	1MAR94	3MAR94
2262	STANDBY/EVALUATION #4	2	0	4MAR94	7MAR94
2263	PILOT TESTS #5 (16 HRS)	1	0	8MAR94	8MAR94
2264	PILOT TESTS #6 (16 HRS)	1	0	9MAR94	9MAR94
2265	PILOT TESTS #7 (16 HRS)	1	0	10MAR94	10MAR94
2266	STANDBY/EVALUATION #5-7	2	0	11MAR94	14MAR94



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Project Start 1JAN92
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Activity Bar/Early Dates
Critical Activity
Progress Bar
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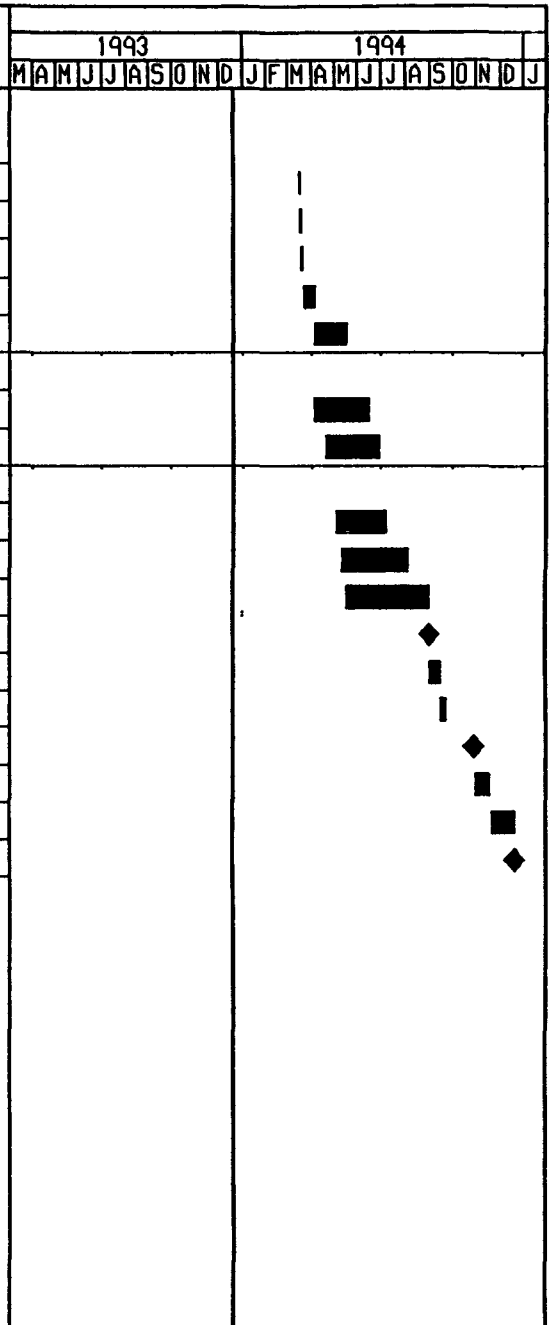
Sheet 2 of 3

EG&G ROCKY FLATS
OU#2 SUBSURFACE IRA
CRITICAL PATH ACTIVITIES

Date	Revision	Checked	Approved

ACTIVITY ID	ACTIVITY DESCRIPTION	REM DUR	TOTL FLT	EARLY START	EARLY FINISH
IMPLEMENTATION AND PILOT TEST INSTALLATION PILOT TEST					
2267	PILOT TESTS #8 (16 HRS)	1	0	15MAR94	15MAR94
2268	PILOT TESTS #9 (16 HRS)	1	0	16MAR94	16MAR94
2269	STANDBY/EVALUATION #8-9	2	0	17MAR94	18MAR94
2270	STANDBY/EVALUTION FOR SUSTAINED OPERATIONS TESTS	10	0	21MAR94	4APR94
3000	SUSTAINED OPERATIONS TESTS	30	0	5APR94	16MAY94
SAMPLE ANALYSIS/RFEDS (EG&G)					
3010	ANALYSIS OF EXTRACTED SOIL GAS SUS OP TESTS	50	0	5APR94	14JUN94
3020	DATA INCORPORATION INTO RFEDS SUS OP TESTS	50	0	19APR94	28JUN94
REPORT PREPARATION					
3040	DOWNLOAD OF NON-VAL FROM RFEDS SUS OP TESTS	45	0	3MAY94	6JUL94
3060	COMPILE DRAFT DATA SUS OP TESTS	60	0	10MAY94	3AUG94
3070	DRAFT PILOT TEST REPORT SUS OP TESTS	75	0	17MAY94	31AUG94
3080	SUBMIT DRAFT PILOT TEST REPORT TO EG&G/DOE	0	0		31AUG94
3090	EG&G & DOE REVIEW	10	0	1SEP94	15SEP94
3100	INCORPORATE EG&G & DOE REVIEW COMMENTS	5	0	16SEP94	22SEP94
3110	SUBMIT DRAFT FINAL PILOT TEST REPORT TO EPA/CDH	0	0		28OCT94
3120	EPA/CDH COMMENTS	15	0	31OCT94	18NOV94
3130	INCORPORATE EPA/CDH REV COMMENTS RESP SUMMMARY	20	0	21NOV94	20DEC94
3140	SUBMIT FINAL PILOT TEST REPORT TO EPA/CDH	0	0		20DEC94



Plot Date 20DEC93
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Project Finish 20DEC94

Activity Bar/Early Dates
Critical Activity
Progress Bar
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OU2#

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EG&G ROCKY FLATS
OU#2 SUBSURFACE IRA
CRITICAL PATH ACTIVITIES

Date	Revision	Checked	Approved

APPENDIX B

PROGRAM/TASK ORDER CENTRAL FILE CATEGORIES

CATEGORY	LETTER DESIGNATION	CONTENT EXAMPLES
Correspondence	A	Incoming and outgoing letters, memos, meeting notes, telecopies, telephone conversation records, etc Subcategories will, at a minimum, include "A1" - In-house correspondence "A2" - Outgoing correspondence "A3" - Incoming correspondence "A4" - Agendas and meeting minutes
Scheduling	B	Gantt charts, float sorts, critical path diagrams, -30/+60 schedules
Originals	C	Originals for reports, regulatory submittals, applications, specifications, proposals, etc A floppy disk with index of files should be included, as appropriate
Contracts, Purchasing Receipts and Specifications	D1	Copies of bids, proposals, contracts, purchase orders for services
	D2	Copies of bids, proposals, contracts, purchase orders for services
	D3	Statements of Work and Implementation Specifications
Field Data	E	Original acquired data that may consist of Subsurface logs, test data forms, calibration data checkprints records, daily field logs, sample collection forms, field copies of chain-of- custody and request-for-analysis forms, field copies of chain-of-custody and request-for-analysis forms, waste-handling data, waste manifests, inspection reports, instrument installation data, subcontractor field data, etc

Calculations and Checkprints	F	Calculations and their checkprints Each set of calculations and checkprints should be placed in the same folder Task Order-specific computer program documentation and verification materials will be included in this category
Reports from Woodward Clyde	G	Program or project reports received form Woodward Clyde
Reports from Resource Technology Group	H	Program or project reports received form Resource Technology
Photographs	I	Original photographs or other images generated on the Task
Laboratory Data	K	Original laboratory test data and results for both field and office laboratories
Licensing and Permitting Applications	L	Copies of documents, issued to regulatory agencies on behalf of Rocky Flats Also included are permit applications
Reference Material	M	Generally, public domain reference materials, such as books, journal articles, drawings, newspaper articles, etc , which pertain to a particular Task Order
Site Monitoring Records	N	Site monitoring records related to industrial hygiene, such as personnel, area and perimeter sampling and monitoring These records should include only those not specified for maintenance with corporate health and safety records
Health & Safety	O	Site specific Health & Safety Plan
Project Management Plan	P	Management document detailing how various aspects of the project will be managed
Quality Records	Q	Program/Task Order quality records including non-conformances, variances, audit reports and responses, and internal report review checklists
Test Plans	S	Notes and comments to site specific test plans

Work Packages	T	Copies of current work packages
Fax Cover Letters	U	Covers for faxes, permits tracking of outgoing information
Budget	V	Copies of Budget & Central Planning information

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